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=> d his

     (FILE 'HOME' ENTERED AT 15:30:45 ON 30 MAY 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 15:31:44 ON 30 MAY
     2003
L1          1966 S HUMAN(2A)ENDOGENOUS(W)RETROVIR?
L2          1145 S HERV(W)(K OR H OR E OR L OR T OR R OR I OR P OR W OR 9)
L3          2201 S L1 OR L2
L4           460 S (PROMOTER OR LONG(W)TERMINAL(W)REPEAT OR LTR)(5A)L3
L5           425 S (PROMOTER OR LONG(W)TERMINAL(W)REPEAT OR LTR)(3A)L3
L6           166 DUP REM L5 (259 DUPLICATES REMOVED)
L7         24614 S RETROVIR?(3A)VECTOR
L8             3 S L6 AND L7
L9           161 S RETROVIR? AND L6
L10        35449 S (CELL OR TISSUE)(3A)(PROMOTER OR ENHANCER)
L11           10 S L10 AND L9
L12            6 S L4 AND L7
L13            3 DUP REM L12 (3 DUPLICATES REMOVED)
L14           10 DUP REM L11 (0 DUPLICATES REMOVED)

=> d bib ab 1-3 l13

L13  ANSWER 1 OF 3     MEDLINE                              DUPLICATE 1
AN   2001133511     MEDLINE
DN   21066720   PubMed ID: 11145909
TI   Cell type-specific expression and promoter activity of
     human endogenous retroviral long
     terminal repeats.
AU   Schon U; Seifarth W; Baust C; Hohenadl C; Erfle V; Leib-Mosch C
CS   Institute of Molecular Virology, Oberschleissheim, D-85764, Germany..
     uschoen@gsf.de
SO   VIROLOGY, (2001 Jan 5) 279 (1) 280-91.
     Journal code: 0110674. ISSN: 0042-6822.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
OS   GENBANK-AF315088; GENBANK-AF315089; GENBANK-AF315090; GENBANK-AF315091;
     GENBANK-AF315092; GENBANK-AF315093; GENBANK-AF315094; GENBANK-AF315095;
     GENBANK-AF315096; GENBANK-AF315097; GENBANK-AF315098; GENBANK-AF315099;
     GENBANK-AF315100; GENBANK-AF315101; GENBANK-AF315102; GENBANK-AF315103;
     GENBANK-AF315104; GENBANK-AF315105; GENBANK-AF315106; GENBANK-AF315107;
     GENBANK-AF315108; GENBANK-AF315109; GENBANK-AF315110; GENBANK-AF315111;
     GENBANK-AF315112; GENBANK-AF315113; GENBANK-AF315114; GENBANK-AF315115;
     GENBANK-AF315116; GENBANK-AF315117
EM   200103
ED   Entered STN: 20010404
     Last Updated on STN: 20010404
     Entered Medline: 20010301
AB   Evolution over millions of years has adapted several thousand copies of
     retrovirus-like elements and over 10 times as many solitary long terminal
     repeats (LTRs) to their present location in the human genome.
     Transcription of these human endogenous retroviruses (HERVs) has been
     detected in various cells and tissues, and in some cases their
     transcriptional control elements have been recruited by cellular genes.
     We used a retroviral pol-specific expression array to obtain a HERV
     transcription profile in a variety of human cells such as epidermal
     keratinocytes, liver cells, kidney cells, pancreatic cells, lymphocytes,
     and lung fibroblasts.  This rapid screening test revealed a distinct HERV
     pol-expression pattern in each cell type tested so far.  About 40
     different U3/R regulatory sequences from the HERV-H and HERV-W families
     were then amplified from actively transcribed 3'HERV LTRs of various cell
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lines and tissues. Their promoter activities were compared with LTR sequences of other known HERV families in 12 human cell lines using a transient luciferase reporter system. Expression of the isolated HERV LTRs varied significantly in these cell lines, in some cases showing strict cell type specificity. These results suggest that endogenous retroviral LTRs may be a valuable source of transcriptional regulatory elements for the construction of targeted **retroviral** expression **vectors**.

L13 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 2000:646166 CAPLUS
DN 133:233587
TI Cell-specific **retroviral** expression **vectors** carrying the **long terminal repeats** of **human endogenous retroviruses**
IN Leib-Mosch, Christine; Schon, Ulrike; Baust, Corinna
PA GSF-Forschungszentrum fuer Umwelt und Gesundheit G.m.b.H., Germany
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000053789	A2	20000914	WO 2000-EP2064	20000309
	WO 2000053789	A3	20010405		
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19910650	A1	20000921	DE 1999-19910650	19990310
	EP 1144667	A2	20011017	EP 2000-918779	20000309
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	DE 1999-19910650	A	19990310		
	WO 2000-EP2064	W	20000309		

AB **Retroviral** expression **vectors** using cell-specific promoters are described for, inter alia, the cell-specific expression of therapeutic genes in gene therapy. The invention specifically relates to **retroviral** expression **vectors** contg. at least the following elements, in a functional configuration: a packaging signal for the vector RNA and for the cell-specific expression of genes; one or more genes under control of a cell-specific **promoter** of a **human endogenous retrovirus** (HERV). A series of **human endogenous retrovirus long terminal repeats** were used to drive the expression of a reporter gene in a no. of different cell lines. Promoters showed patterns of cell-specificity in cell lines. Introduction of the LTR of of HERV-H6 into mouse mammary tumor virus (MMTV) drove expression of the reporter gene. Expression was not induced by dexamethasone but it showed a 10-fold higher level of expression of the reporter gene than was found in dexamethasone-responsive cells using the MMTV LTR to drive expression. Further anal. of the promoters is described.

L13 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 2000:278124 CAPLUS
DN 132:304292
TI Long terminal repeat, enhancer, and insulator sequences for use in recombinant vectors
IN Tuan, Dorothy; Long, Qiaoming; Bengra, Chikh
PA Medical College of Georgia Institute, Inc., USA
SO PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DT Patent

LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000023606	A1	20000427	WO 1999-US24646	19991021

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6395549	B1	20020528	US 1999-422576	19991021
PRAI US 1998-105256P	P	19981022		

AB Disclosed are an enhancer, insulator, and promoter from the HS5 region in the 5' boundary area of the locus control region of human-like globin genes. These transcription control sequences can be used to control expression of any desired gene of interest and can be used in any vector for this purpose. The control sequences are derived from the area in and around the U3 region of a solitary endogenous retrovirus (ERV-9) long terminal repeat (LTR). Also disclosed are methods of expressing any gene of interest. For this purpose, the control sequences can be operably linked to the gene of interest (and operably linked to each other). The disclosed enhancers, insulators, and promoters can also be used with any other control sequences. Preferably, the control sequences are used in vectors to obtain expression of a gene of interest in a cell, including cells in animals.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib ab 1-10 l14

L14 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 2002:126995 CAPLUS
DN 137:42497
TI The solitary long terminal repeats of ERV-9 endogenous **retrovirus** are conserved during primate evolution and possess enhancer activities in embryonic and hematopoietic cells
AU Ling, Jianhua; Pi, Wenhu; Bollag, Roni; Zeng, Shan; Keskintepe, Meral; Saliman, Hatem; Krantz, Sanford; Whitney, Barry; Tuan, Dorothy
CS Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA, 30912, USA
SO Journal of Virology (2002), 76(5), 2410-2423
CODEN: JOVIAM; ISSN: 0022-538X
PB American Society for Microbiology
DT Journal
LA English
AB The solitary long terminal repeats (LTRs) of ERV-9 endogenous **retrovirus** contain the U3, R, and U5 regions but no internal viral genes. They are middle repetitive DNAs present at 2,000 to 4,000 copies in primate genomes. Sequence analyses of the 5' boundary area of the erythroid .beta.-globin locus control region (.beta.-LCR) and intron 2 of the embryonic axin gene show that a solitary ERV-9 LTR has been stably integrated in the resp. loci for at least 15 million years in higher primates from orangutan to human. Functional studies utilizing the green fluorescent protein (GFP) gene as the reporter in transfection expts. show that the U3 region of the LTRs possesses strong **enhancer** activity in embryonic **cells** of widely different tissue origins and in adult cells of blood lineages. In both the genomic LTRs of embryonic placental cells and erythroid K562 cells and transfected LTRs of recombinant GFP plasmids in K562 **cells**, the U3 **enhancer**

activates synthesis of RNAs that are initiated from a specific site 25 bases downstream of the AATAAA (TATA) motif in the U3 promoter. A second AATAAA motif in the R region does not serve as the TATA box or as the polyadenylation signal. The LTR-initiated RNAs extend through the R and U5 regions into the downstream genomic DNA. The results suggest that the ERV-9 LTR-initiated transcription process may modulate transcription of the assocd. gene loci in embryonic and hematopoietic cells.

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 10 MEDLINE
AN 2002653118 IN-PROCESS
DN 22300327 PubMed ID: 12411602
TI The opitz syndrome gene mid1 is transcribed from a **human endogenous retroviral promoter**.
AU Landry Josette-Renee; Rouhi Arefeh; Medstrand Patrik; Mager Dixie L
CS Terry Fox Laboratory, British Columbia Cancer Agency, and Department of Medical Genetics, University of British Columbia, Vancouver, Canada. Department of Developmental Biology, Lund University, Sweden.
SO MOLECULAR BIOLOGY AND EVOLUTION, (2002 Nov) 19 (11) 1934-42. Journal code: 8501455. ISSN: 0737-4038.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20021105
Last Updated on STN: 20021211
AB **Human endogenous retroviruses** (HERVs) and other **long terminal repeat** (LTR)-containing elements comprise a significant portion (8%) of the human genome and are likely vestiges of **retroviral** infections during primate evolution. Many of the HERVs present in human DNA have retained functional promoter, enhancer, and polyadenylation signals, and these regulatory sequences have the potential to modify the expression of nearby genes. To identify **retroviral** elements that contribute to the transcription of human genes, we screened sequence databases for chimeric (viral-cellular) transcripts. These searches revealed a fusion transcript containing the **LTR** of an **HERV-E** element linked to the Opitz syndrome gene Mid1. We confirmed the authenticity of the chimeric transcript by 5' rapid amplification of cDNA ends (RACE) and established that the Mid1 mRNA isoform was transcribed from a **retroviral** LTR. The identification of a **retroviral** first exon suggested the existence of alternative promoters for Mid1 because nonretroviral (native) 5' untranslated regions (UTRs) had been reported previously for this gene. Although Mid1 transcripts could be detected in all tissues tested, quantitative real-time reverse transcription-polymerase chain reaction indicated that the **retroviral** promoter contributes significantly to the level of Mid1 transcripts in placenta and embryonic kidney, where chimeric mRNAs were found to represent 25% and 22% of overall Mid1 mRNAs, respectively. Transient transfection studies supported a role for the LTR as a strong **tissue**-specific **promoter** in placental and embryonic kidney cell lines and suggested a function for the LTR as an enhancer. These findings provide further evidence that some endogenous **retroviruses** have evolved a biological function by contributing transcriptional regulatory elements to cellular genes.

L14 ANSWER 3 OF 10 MEDLINE
AN 2002439535 MEDLINE
DN 22185262 PubMed ID: 12197391
TI [Enhancer activity of solitary **long terminal repeat** of the **human endogenous retrovirus** of the HERV-K family].
Enkhansernaia aktivnost' vnevirusnogo dlinnogo kontsevogo povtora

endogennogo **retrovirusa** cheloveka semeistva HERV-K.
AU Domanskii A N; Akopov S B; Lebedev Iu B; Nikolaev L G; Sverdlov E D
CS Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, ul. Miklukho-Maklaya 16/10, GSP Moscow, 117997 Russia.
SO BIOORGANICHESKAIA KHIMIIA, (2002 Jul-Aug) 28 (4) 341-5.
Journal code: 7804941. ISSN: 0132-3423.
CY Russia: Russian Federation
DT Journal; Article; (JOURNAL ARTICLE)
LA Russian
FS Priority Journals
EM 200209
ED Entered STN: 20020829
Last Updated on STN: 20020925
Entered Medline: 20020924
AB The transient expression of the luciferase reporter gene helped us to detect a **tissue**-specific **enhancer** activity of the solitary extraviral **long terminal repeat** (**LTR**) of the **human endogenous retrovirus** K (HERV-K). The LTR was previously mapped to the 19q13.2 locus. It contains a number of potential regulatory elements including TATA box, binding sites for some nuclear factors, and a polyadenylation signal. However, an analysis of the genomic sequences close to the LTR did not reveal any known genes or the expressing marker sequences (EST), whose functioning could be regulated by this LTR. The enhancer activity can be preserved in the solitary LTR due to its involvement in a long-range control of genome functioning or by the absence of functional disruptive mutations within the human-specific LTR, because it is of a relatively young evolutionary age. The English version of the paper: Russian Journal of Bioorganic Chemistry, 2002, vol. 28, no. 4; see also http://www.maik.ru.

L14 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 2002:575807 CAPLUS
DN 137:380769
TI Enhancer Activity of Solitary **Long Terminal Repeat** of **Human Endogenous Retrovirus** K
AU Domansky, A. N.; Akopov, S. B.; Lebedev, Yu. B.; Nikolaev, L. G.; Sverdlov, E. D.
CS Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, 117997, Russia
SO Russian Journal of Bioorganic Chemistry (Translation of Bioorganicheskaya Khimiya) (2002), 28(4), 308-311
CODEN: RJBCET; ISSN: 1068-1620
PB MAIK Nauka/Interperiodica Publishing
DT Journal
LA English
AB The transient expression of the luciferase reporter gene was used to detect the **tissue**-specific **enhancer** activity of the solitary extraviral **long terminal repeat** (**LTR**) of the **human endogenous retrovirus** K (HERV-K). The LTR was previously mapped to the 19q13.2 locus. It contains a no. of potential regulatory elements including TATA box, binding sites for some nuclear factors, and a polyadenylation signal. However, an anal. of the genomic sequences close to the LTR did not reveal any known genes or the expressed sequences (EST), whose functioning could be regulated by this LTR. The enhancer activity can be preserved in the solitary LTR due to its involvement in the long-range control of genome functioning or by the absence of functional disruptive mutations within the human-specific LTR, because it is of a relatively young evolutionary age.
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 10 MEDLINE
AN 2001202834 MEDLINE
DN 21125746 PubMed ID: 11054415
TI Long terminal repeats are used as alternative promoters for the endothelin B receptor and apolipoprotein C-I genes in humans.
AU Medstrand P; Landry J R; Mager D L
CS Terry Fox Laboratory, British Columbia Cancer Agency and Department of Medical Genetics, University of British Columbia, Vancouver, British Columbia, V5Z 1L3, Canada.
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (2001 Jan 19) 276 (3) 1896-903.
Journal code: 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200104
ED Entered STN: 20010417
Last Updated on STN: 20030105
Entered Medline: 20010412
AB To examine the potential regulatory involvement of retroelements in the human genome, we screened the transcribed sequences of GenBank and expressed sequence tag data bases with long terminal repeat (LTR) elements derived from different human endogenous **retroviruses**. These screenings detected human transcripts containing **LTRs** belonging to the **human endogenous retrovirus**-E family fused to the apolipoprotein CI (apoC-I) and the endothelin B receptor (EBR) genes. However, both genes are known to have non-LTR (native) promoters. Initial reverse transcription-polymerase chain reaction experiments confirmed and authenticated the presence of transcripts from both the native and LTR promoters. Using a 5'-rapid amplification of cDNA ends protocol, we showed that the alternative transcripts of apoC-I and EBR are initiated and promoted by the LTRs. The LTR-apoC-I fusion and native apoC-I transcripts are present in many of the tissues tested. As expected, we found apoC-I preferentially expressed in liver, where about 15% of the transcripts are derived from the LTR promoter. Transient transfections suggest that the expression is not dependent on the LTR itself, but the presence of the LTR increases activity of the apoC-I promoter from both humans and baboons. The native EBR-driven transcripts were also detected in many tissues, whereas the LTR-driven transcripts appear limited to placenta. In contrast to the LTR of apoC-I, the EBR LTR promotes a significant proportion of the total EBR transcripts, and transient transfection results indicate that the LTR acts as a strong promoter and **enhancer** in a placental **cell** line. This investigation reports two examples where LTR sequences contribute to increased transcription of human genes and illustrates the impact of mobile elements on gene and genome evolution.

L14 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 2000:646166 CAPLUS
DN 133:233587
TI Cell-specific **retroviral** expression vectors carrying the **long terminal repeats** of **human endogenous retroviruses**
IN Leib-Mosch, Christine; Schon, Ulrike; Baust, Corinna
PA GSF-Forschungszentrum fuer Umwelt und Gesundheit G.m.b.H., Germany
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000053789	A2	20000914	WO 2000-EP2064	20000309
	WO 2000053789	A3	20010405		

W: JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

DE 19910650 A1 20000921 DE 1999-19910650 19990310
EP 1144667 A2 20011017 EP 2000-918779 20000309
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
PRAI DE 1999-19910650 A 19990310
WO 2000-EP2064 W 20000309

AB **Retroviral** expression vectors using **cell**-specific **promoters** are described for, inter alia, the cell-specific expression of therapeutic genes in gene therapy. The invention specifically relates to **retroviral** expression vectors contg. at least the following elements, in a functional configuration: a packaging signal for the vector RNA and for the cell-specific expression of genes; one or more genes under control of a **cell**-specific **promoter** of a **human endogenous retrovirus** (HERV). A series of **human endogenous retrovirus long terminal repeats** were used to drive the expression of a reporter gene in a no. of different cell lines. **Promoters** showed patterns of **cell** -specificity in cell lines. Introduction of the LTR of of HERV-H6 into mouse mammary tumor virus (MMTV) drove expression of the reporter gene. Expression was not induced by dexamethasone but it showed a 10-fold higher level of expression of the reporter gene than was found in dexamethasone-responsive cells using the MMTV LTR to drive expression. Further anal. of the promoters is described.

L14 ANSWER 7 OF 10 MEDLINE
AN 1999263499 MEDLINE
DN 99263499 PubMed ID: 10329003
TI Intergenic splicing between a HERV-H endogenous **retrovirus** and two adjacent human genes.
AU Kowalski P E; Freeman J D; Mager D L
CS Department of Medical Genetics, University of British Columbia, Vancouver, British Columbia, V5Z 1L3, Canada.
SO GENOMICS, (1999 May 1) 57 (3) 371-9.
Journal code: 8800135. ISSN: 0888-7543.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-AF110315
EM 199908
ED Entered STN: 19990816
Last Updated on STN: 19990816
Entered Medline: 19990802

AB We previously reported that a **long terminal repeat** (**LTR**) of a **human endogenous retrovirus** of the HERV-H family promotes expression of a cellular fusion transcript in teratocarcinoma cell lines. This transcript was termed PLA2L due to two regions of similarity to the secreted form of phospholipase A2. In this study, evidence is presented indicating that this transcript appears to be the result of intergenic splicing between the HERV-H element and two independent downstream genes. The 5' gene has been named HHLA1 (**HERV-H LTR**-associating 1) and is of unknown function but shows sequence conservation in other mammals. The 3' gene is now known to encode human otoconin-90 (OC90) which, in mice, is a major protein expressed in the fetal inner ear. Evidence for intergenic splicing of these two genes includes: (1) the isolation of LTR-driven HHLA1 transcripts, unspliced to otoconin-90 exons, with variable sites of polyadenylation; (2) the cloning of both the putative human intergenic genomic region and the novel 5' terminus of the mouse otoconin-90 gene; (3) the identification of homologous potential

signal sequences in the 5' region of mouse otoconin-90 and in the middle of the PLA2L transcript; and (4) the lack of detectable chromosomal rearrangements involving this region in teratocarcinoma cells. The PLA2L transcript therefore represents a rare example of intergenic splicing of two closely linked genes. We hypothesize that human HHLA1 and OC90 are normally expressed independently from different promoters but are expressed from the LTR promoter and spliced together in teratocarcinoma cells. It is tempting to speculate that the high activity of the LTR **promoter** in this **cell** type may induce transcriptional fusion between these two genes.

L14 ANSWER 8 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1997:379337 BIOSIS
DN PREV199799678540
TI **Tissue** specific expression and **promoter** activity of different HERV-LTRs.
AU Schoen, U. (1); Baust, C.; Hohenadl, C. (1); Erfle, V. (1); Hehlmann, R.; Leib-Moesch, C. (1)
CS (1) GSF-Forschungszentrum Umwelt Gesundheit, Inst. Mol. Virol., D-85764 Oberschleissheim Germany
SO Journal of Molecular Medicine (Berlin), (1997) Vol. 75, No. 7, pp. B228. Meeting Info.: XIX Symposium of the International Association for Comparative Research on Leukemia and Related Diseases Heidelberg, Germany July 13-18, 1997
ISSN: 0946-2716.
DT Conference; Abstract
LA English

L14 ANSWER 9 OF 10 MEDLINE
AN 96099430 MEDLINE
DN 96099430 PubMed ID: 8523525
TI The promoter activity of **long terminal repeats** of the **HERV-H** family of human **retrovirus** -like elements is critically dependent on Sp1 family proteins interacting with a GC/GT box located immediately 3' to the TATA box.
AU Sjottem E; Anderssen S; Johansen T
CS Department of Biochemistry, Institute of Medical Biology, University of Tromso, Norway.
SO JOURNAL OF VIROLOGY, (1996 Jan) 70 (1) 188-98.
Journal code: 0113724. ISSN: 0022-538X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-U95997; GENBANK-U95998; GENBANK-U95999; GENBANK-U96000; GENBANK-U96001; GENBANK-U96002; GENBANK-U96003; GENBANK-U96004
EM 199601
ED Entered STN: 19960219
Last Updated on STN: 19980206
Entered Medline: 19960125
AB The HERV-H family of endogenous **retrovirus**-like elements is widely distributed in the human genome, with about 1,000 full-length elements and a similar number of solitary long terminal repeats (LTRs). **HERV-H LTRs** have been shown to direct the transcription of both HERV-H-encoded and adjacent cellular genes. Transcripts of HERV-H elements are especially abundant in placenta, teratocarcinoma cell lines, and cell lines derived from testicular and lung tumors. Here we report that only a subset of **HERV-H LTRs** display **promoter** activity in human **cell** lines and that these LTRs are characterized by the presence of a GC/GT box immediately downstream of the TATA box. This GC/GT box is required for promoter activity, while, surprisingly, the TATA box is dispensable. The ubiquitously expressed transcription factors Sp1 and Sp3

bound to this GC/GT box and stimulated transcription from the promoter-active LTRs in the teratocarcinoma cell line NTera2-D1. However, in HeLa and Drosophila SL-2 cells, Sp1 acted as a transcriptional activator of the LTRs, while Sp3 acted as a repressor of Sp1-mediated transcriptional activation. Cotransfection studies also revealed that the tissue-specific Sp1-related protein BTEB bound to this GC/GT box and stimulated transcription from the LTR **promoters** in NTera2-D1 **cells**. These results show that members of the Sp1 protein family are crucial determinants for transcriptional activation of **HERV-H LTR promoters** and suggest that these proteins may also be involved in determining the tissue-specific expression pattern of HERV-H elements.

L14 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 1992:544740 CAPLUS
DN 117:144740
TI Endogenous **retroviral** sequences are required for tissue-specific expression of a human salivary amylase gene
AU Ting, Chao Nan; Rosenberg, Michael P.; Snow, Claudette M.; Samuelson, Linda C.; Meisler, Miriam H.
CS Dep. Hum. Genet., Univ. Michigan, Ann Arbor, MI, 48109-0618, USA
SO Genes & Development (1992), 6(8), 1457-65
CODEN: GEDEEP; ISSN: 0890-9369
DT Journal
LA English
AB The human salivary amylase genes are assocd. with two inserted elements, a .gamma.-actin-processed pseudogene and an endogenous **retroviral** -like element. To test the contribution of these inserted elements to tissue specificity, 25 lines of transgenic mice carrying 10 amylase constructs were established. A 1-kb fragment of AMY1C (-1003 to +2) was found to be sufficient for parotid-specific expression of a human growth hormone reporter gene. The 1-kb fragment is entirely derived from inserted sequences. Deletion from -1003 to -826 resulted in reduced levels of transgene expression and loss of tissue-specificity. The fragment -1003 to -327 was sufficient to transfer parotid specificity to the thymidine kinase promoter. The data demonstrate that the functional **tissue**-specific **promoter** of human AMY1C is derived from inserted sequences and that parotid expression can be conferred by sequences derived solely from the **retrovirus**. A role for retrotranposition in the evolution of gene regulation is indicated by these and other recent observations.

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